

IN THE CLAIMS

1. Cancelled.
2. Cancelled.
3. (Currently Amended) The apparatus of claim 2 7, wherein the drive gear frictionally engages an outer surface of the shell.
4. (Currently Amended) The apparatus of claim 2 7, wherein the drive gear includes a plurality of drive gear teeth that at least partially impinge on an outer surface of the shell to facilitate insertion and retraction of the push rod cable with respect to the lateral conduit.
5. Cancelled.
6. Cancelled.
7. (Currently Amended) ~~The apparatus of claim 6,~~ An apparatus for inspecting a lateral conduit from a main conduit, the apparatus comprising:
a frame;
a drive motor interconnected with the frame;
at least one drive gear selectively rotated by the drive motor in one of an insertion direction and a retraction direction;

a push rod cable engaged by the at least one drive gear such that rotation of the at least one drive gear in the insertion and retraction directions causes respective insertion and retraction of the push rod cable with respect to the lateral conduit, the push rod cable including a core having sufficient longitudinal compressive rigidity to allow insertion of the push rod cable into the lateral conduit and having sufficient transverse flexibility to negotiate substantially all bends within the lateral conduit, and a push rod circuitry disposed along an outside surface of the core;

a lateral camera interconnected with the push rod cable for insertion into the lateral conduit with the push rod cable, wherein the push rod circuitry contains the necessary electrical and video circuitry to operate the lateral camera;

a movable friction member interconnected with the frame for movement with respect to the frame, and adapted to frictionally engage an inner surface of a wall of the main conduit; and

a propulsion motor interconnected with the frame, and operatively interconnected with the movable friction member for selective movement of the friction member to cause movement of the apparatus in one of a forward and reverse direction with respect to the main conduit;

wherein the push rod cable includes a shell substantially encasing the push rod circuitry and the core;

the apparatus further comprising at least one pressure roller, wherein the at least one pressure roller applies pressure to a portion of the push rod cable to facilitate engagement of an outer surface of the shell by the at least one drive gear;

wherein the at least one pressure roller includes at least one spring that biases the at least one pressure roller against the push rod cable; and

wherein the at least one spring enables the at least one pressure roller to apply about 80-100 psi pressure to the portion of the push rod cable.

8. (Currently Amended) The apparatus of claim 5 7, wherein the at least one drive gear includes three drive gears, and wherein the at least one pressure roller includes three pressure rollers.

9. (Currently Amended) The apparatus of claim ~~4~~ 10, further comprising a remote control station and a supply cable interconnecting the remote control station with the apparatus, the supply cable including all electrical and video circuitry necessary to operate the apparatus from the control station and to allow inspection of the lateral conduit through the lateral camera.

10. (Currently Amended) ~~The apparatus of claim 1,~~ An apparatus for inspecting a lateral conduit from a main conduit, the apparatus comprising:

a frame;

a drive motor interconnected with the frame;

at least one drive gear selectively rotated by the drive motor in one of an insertion direction and a retraction direction;

a push rod cable engaged by the at least one drive gear such that rotation of the at least one drive gear in the insertion and retraction directions causes respective insertion and retraction of the push rod cable with respect to the lateral conduit, the push rod cable including a core having sufficient longitudinal compressive rigidity to allow insertion of the push rod cable into the lateral conduit and having sufficient transverse flexibility to negotiate substantially all bends within the lateral conduit, and a push rod circuitry disposed along an outside surface of the core;

a lateral camera interconnected with the push rod cable for insertion into the lateral conduit with the push rod cable, wherein the push rod circuitry contains the necessary electrical and video circuitry to operate the lateral camera;

a movable friction member interconnected with the frame for movement with respect to the frame, and adapted to frictionally engage an inner surface of a wall of the main conduit; and

a propulsion motor interconnected with the frame, and operatively interconnected with the movable friction member for selective movement of the friction member to cause movement of the apparatus in one of a forward and reverse direction with respect to the main conduit;

wherein the propulsion motor is more powerful than the drive motor, and wherein the drive motor is adapted to be selectively locked, thereby preventing rotation of the at least one drive gear in either the insertion direction or retraction direction to permit the propulsion motor to be engaged to move the apparatus in the forward direction and in the reverse direction in rapid succession to overcome an obstruction encountered within the lateral conduit.

11. (Currently Amended) The apparatus of claim + 10, further comprising:

a launch chute assembly interconnected with a front portion of the frame, the launch chute assembly at least partially supporting the lateral camera when the lateral camera is in a fully retracted position; and

a rotate motor interconnected with the frame and with the launch chute assembly, and adapted to selectively rotate the launch chute assembly in one of a clockwise and a counterclockwise direction about a rotate axis that is generally parallel to the longitudinal axis.

12. (Original) The apparatus of claim 11, further comprising a main camera interconnected with the launch chute assembly for rotation therewith about the rotate axis.

13. (Original) The apparatus of claim 12, further comprising a remote control station and a supply cable interconnecting the remote control station with the apparatus, the supply cable including all electrical and video circuitry necessary to operate the apparatus from the control station, the relative positions of the lateral camera and an opening to the lateral conduit being viewable through the main camera from the remote control station, wherein the lateral conduit may be inspected through the lateral camera from the remote control station.

14. (Original) The apparatus of claim 11, wherein the launch chute assembly includes a launch chute member, and wherein the lateral camera is at least partially supported by the launch chute when the lateral camera is in the fully retracted position.

15. (Original) The apparatus of claim 14, wherein the launch chute member defines a channel in which the lateral camera is at least partially housed when the lateral camera is in the fully retracted position.

16. Cancelled.

17. (Original) An apparatus for inspecting a lateral conduit from a main conduit, the apparatus comprising:
a frame;

a drive motor interconnected with the frame;

at least one drive gear selectively rotated by the drive motor in one of an insertion direction and a retraction direction;

a push rod cable engaged by the at least one drive gear such that rotation of the at least one drive gear in the insertion and retraction directions causes respective insertion and retraction of the push rod cable with respect to the lateral conduit the push rod cable including

a core having sufficient longitudinal compressive rigidity to allow insertion of the push rod cable into the lateral conduit and having sufficient transverse flexibility to negotiate substantially all bends within the lateral conduit, and

a push rod circuitry disposed along an outside surface of the core;

a lateral camera interconnected with the push rod cable for insertion into the lateral conduit with the push rod cable, wherein the push rod circuitry contains the necessary electrical and video circuitry to operate the lateral camera;

a launch chute assembly interconnected with a front portion of the frame, the launch chute assembly at least partially supporting the lateral camera when the lateral camera is in a fully retracted position;

a rotate motor interconnected with the frame and with the launch chute assembly, and adapted to selectively rotate the launch chute assembly in one of a clockwise and a counterclockwise direction about a rotate axis that is generally parallel to the longitudinal axis; and

said launch chute assembly including

a first bracket interconnected with the frame and rotatable by the rotate motor about the rotate axis;

a second bracket interconnected with the first bracket for rotation therewith about the rotate axis and pivotable with respect to the first bracket about a first transverse axis that is substantially normal to the rotate axis, the second bracket defining a channel in which the lateral camera is at least partially housed when in the fully retracted position;

a third bracket interconnected with the second bracket for rotation therewith about the rotate axis, the second and third brackets pivotal with respect to each other about a second transverse axis that is substantially normal to the rotate axis; and

a tilt motor interconnected with the third bracket to selectively move the third bracket toward or away from the tilt motor, thereby causing the second bracket to raise or lower the lateral camera with respect to the rotate axis.

18. Cancelled.

19. Cancelled.

20. Cancelled.

21. (Currently Amended) ~~The apparatus of claim 20;~~ A self-propelled apparatus for inspecting a lateral conduit from a main conduit, the apparatus comprising:

a frame;

a push rod cable movable in an insertion direction and a retraction direction with respect to the lateral conduit;

a lateral camera interconnected with the push rod cable for insertion into the lateral

conduit with the push rod cable;

a movable friction member interconnected with the frame for movement with respect to the frame, and adapted to frictionally engage an inner surface of a wall of the main conduit;

a propulsion motor carried by the frame, and operatively interconnected with the movable friction member to cause movement of the friction member to move the apparatus with respect to the main conduit; and

a drive motor interconnected with the frame, the drive motor causing the push rod to move in the insertion and retraction directions;

wherein the propulsion motor is more powerful than the drive motor, and wherein the drive motor is adapted to be selectively locked, thereby preventing insertion and retraction of the push rod cable with respect to the lateral conduit, to permit the propulsion motor to move the apparatus in forward and reverse directions with respect to the main conduit in rapid succession to overcome an obstruction encountered within the lateral conduit.

22. Cancelled.

23. (Currently Amended) The apparatus of claim ~~22~~ 21, further comprising a launch chute assembly, ~~the at least one camera including a supporting the lateral camera interconnected with the push rod cable and supported by the launch chute assembly,~~ the apparatus further comprising a tilt motor, the launch chute assembly being selectively tilted by the tilt motor to tilt the lateral camera with respect to the longitudinal axis of the main conduit.

24. (Currently Amended) The apparatus of claim 23, further comprising a rotate

motor, wherein the rotate motor is interconnected with the launch chute assembly to cause the launch chute assembly to rotate about an axis of rotation.

25. (Currently Amended) The apparatus of claim 24, further comprising a main camera and further comprising a bracket interconnected with the launch assembly, wherein the at ~~least one camera also includes a~~ main camera is mounted to the bracket and rotatable about the axis of rotation under the influence of the rotate motor.

26. Cancelled.

27. Cancelled.